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[Claim(s)]

[Claim 1] In a skeleton member which it comes to fix to the interior-of-a-room side of a roof panel. The 1st engagement means which come to form an opening and it comes to form along with this opening, A light which has the 2nd engagement means that comes to carry out formed protruding to an edge of said opening, and the 3rd engagement means which a position along an edge of said opening comes to allocate, and it comes to assemble beforehand, A tonneau light for vehicles characterized by intervening a roof trim and coming to comprise a 1st and 2nd main-engriffe stage which is a tonneau light for vehicles which comes to carry out engaging support to said skeleton member, and can engage with said 1st and 2nd engagement means at said light, and a placing means which can be laid on said 3rd engagement means.

[Claim 2] A tonneau light for vehicles which is the tonneau light for vehicles according to claim 1, and is characterized by said 3rd engagement means consisting of flat spring material which it comes to form in the shape of [to a section] a character.

[Claim 3] A tonneau light for vehicles which is the tonneau light for vehicles according to claim 1 or 2, and is characterized by coming to form said placing means in a position which made section inverse L-shaped and sandwiched said 2nd engagement means.

[Claim 4] A tonneau light for vehicles characterized by being a tonneau light for vehicles given in any 1 paragraph of claim 1 thru/or claim 3, coming to form in said roof trim the 4th engagement means that laps with said 2nd engagement means bottom, and both coming to be engaged as it is also at said 2nd main-en-griffe stage.

[Detailed Description of the Invention]

[Field of the Invention]

[0001] This invention relates to the tonneau light for vehicles, especially the tonneau light for vehicles attached to a roof in the car.

[Description of the Prior Art]

[0002] There is a thing of the structure shown in drawing 6, for example as a tonneau light for vehicles, for example, the vehicles attached to in the car [of a car]. In the vehicles in this structure, to the channel shape skeleton member 102 down side provided in the inner surface side of the roof panel 103. The molded header 104 made of a synthetic resin is allotted, and the light 101 is formed in the approximately center part of this molded header 104 (refer to JP,6-65092,U as an analogous art).

[0003] The valve socket 106 which comes to connect this light 101 to the valve 105 and this valve 105, The reflector 107 which makes it come to reflect in the interior-of-a-room side the light turned on when it was supported by this valve socket 106 and said valve 105 lit up, The lamp housing 108 which said skeleton member 102 comes to support by welding with attachment ***** in said valve socket 106, It comes to comprise the lens 109 made of a synthetic resin which it comes to attach to the opening part 108a of this lamp housing 108, and an on/off switch which are allocated in said molded header 104 and which is not illustrated. Since it comes to cable the harness 114 which supplies the electrical and electric equipment from the power supply which is not illustrated to said valve socket 106, this harness 114 has been connected to the connector which was allotted between said roof panel 103 and said molded header 104 and which is not illustrated.

[0004] Come to form said lens 109 in the size which can cover and hide the opening 111 formed in said molded header 104, and to the rear-face side, i.e., the upper part. The cylindrical suspending portion 112 which has the flight channel 112a is formed, After allotting said molded header 104 to said reinforcing member 102 bottom, it is supported and becomes it so that it may put through the opening 113 formed in said reinforcing member 102, the opening part 108a of said lamp housing 108, and the opening 111 of said molded header 104.

[Problem(s) to be Solved by the Invention]

[0005] However, if it is in such a Prior art, when the lamp housing 108 is being beforehand fixed to the skeleton member 102, it is necessary to assemble accessories like the valve 105, the valve socket 106, and the reflector 107 in the assembly plant of a car, and workability is made to

check. The work of carrying in said lens 109 other than said part 105,106,107 into a car, and screwing it in is independently required, and workability is made to check also at this point.

[0006]This invention is made paying attention to such a Prior art, and is a thing. the purpose is to provide the tonneau light for vehicles whose workability at the time of it being alike and attaching improved remarkably.

[Means for Solving the Problem]

[0007] To a skeleton member which it comes to fix to the interior-of-a-room side of a roof panel, the invention according to claim 1. The 1st engagement means which come to form an opening and it comes to form along with this opening, A light which has the 2nd engagement means that comes to carry out formed protruding to an edge of said opening, and the 3rd engagement means which a position along an edge of said opening comes to allocate, and it comes to assemble beforehand, A roof trim is intervened and it comes to comprise a 1st and 2nd main-en-griffe stage which is a tonneau light for vehicles which comes to carry out engaging support to said skeleton member, and can engage with said 1st and 2nd engagement means at said light, and a placing means which can be laid on said 3rd engagement means.

[0008]According to the invention according to claim 1, since a molded header is composed only by not assembling accessories in an assembly plant of a car and moreover assembling a light to a skeleton member, since it comes to be assembled beforehand, workability of a light at the time of attaching will improve remarkably.

[0009]Since the 1st and 2nd main-en-griffe stage can engage with the 1st and 2nd engagement means of a skeleton member, Since a worker is supported only by driving a light and can lay a placing means in the 3rd engagement means, if a driven light is shifted, a placing means is laid on the 3rd engagement means, and even when vibration etc. are shocking, a light will not separate certainly from a skeleton member.

[0010]The invention according to claim 2 is the tonneau light for vehicles according to claim 1, and said 3rd engagement means consists of flat spring material which it comes to form in the shape of [to a section] a character.

[0011]According to the invention according to claim 2, since the 3rd engagement means consists of flat spring material which it comes to form in the shape of [to a section] a character, even if board thickness of a molded header has change, it can follow enough and the possibility of generating of a trouble at the time of attachment decreases.

[0012]The invention according to claim 3 is the tonneau light for vehicles according to claim 1 or 2, and said placing means makes section inverse L-shaped, and it comes to form it in a position which sandwiched said 2nd engagement means.

[0013]Since a wall of said placing means restricts a slide amount according to the invention according to claim 3, in spite of being what is called **** work where alignment of the 1st engagement means and the 1st main-en-griffe stage becomes certain and that cannot be seen, it can be considered as easy work.

[0014]The invention according to claim 4 is a tonneau light for vehicles given in any 1 paragraph of claim 1 thru/or claim 3, and it comes to form in said roof trim the 4th engagement means that laps with said 2nd engagement means bottom, and it both comes to engage with it as it is also at said 2nd main-en-griffe stage.

[0015]According to the invention according to claim 4, since both said 2nd engagement means and said 4th engagement means come to be engaged when the 2nd main-en-griffe stage is engaged, a molded header will be pinched by skeleton member and positive support of a molded header of it is attained.

[Embodiment of the Invention]

[0016] Hereafter, the suitable embodiment of this invention is described based on drawing 1 - drawing 5. The vehicles 1, for example, the light attached to in the car [of a car], It comes to carry out insertion support like the white arrow shown in drawing 2 at the channel shape skeleton member 2 which it comes to fix to the interior-of-a-room side of the well-known roof panel 3, and the roof trim 4 which is a molded header which it comes to allot to this skeleton member 2 bottom is pinched by the light 1 and the skeleton member 2.

[0017]The 1st engagement means 6 that is a breakthrough of the rectangle which come to form the opening 5 in said skeleton member 2, and it comes to form in it along with one side of the short length edge 5a of this opening 5, The 2nd engagement means 7 and 7 of the flange shape which counters the mid-position of the both sides of the edge 5b of the long picture of said opening 5, and comes to carry out formed protruding to the opening 5 side, The position of the four quarters of this opening 5 comes to be allocated along the edge 5b of the long picture of said opening 5, and it has the 3rd engagement means 8 that consists of flat spring material which it comes to form in the shape of [to a section] a character. The supporter 8b which entered in the crevice 2a where this 3rd engagement means 8 was formed in said skeleton member 2 is supported by the rivet 8a.

[0018] Illumination methods, such as a valve which does not illustrate the light 1 which it comes to assemble beforehand, The lens 9 which diffuses the light which emits light from this illumination method, and the housing 10 which does not have a light transmittance state which it comes to allot to this lens 9 upper part, The 1st main-en-griffe stage 11 which can engage with said 1st engagement means 6 and which formed protruding is carried out to a transverse direction, and becomes as shown in drawing 4 from the valve stowage 10a of the housing 10 like, The 2nd main-en-griffe stages 12 and 12 which can engage with said 2nd engagement means 7 and 7 and which formed protruding is carried out to a lengthwise direction, and become as shown in drawing 5 from the housing 10 like, it can lay on said all 3rd engagement means 8 -- like -- the valve stowage 10a of the housing 10 -- a transverse direction -- a collar -- it comes to comprise the placing means 13, 13, 13, and 13 which come to carry out formed protruding to **.

[0019] It comes to form said placing means 13 in the four quarters of the light 1, and sectional shape makes inverse L-shaped [of the wall 13a and the lateral wall 13b], and it comes to form it in the position which sandwiched said 2nd engagement means 7.

[0020] Come to form in said roof trim 4 the opening 14 which can insert the valve stowage 10a of the housing 10 of said light 1, and it comes to form in it the 4th engagement means 15 that laps with said 2nd engagement means 7 bottom, and both comes to engage with it as it is also at said 2nd main-en-griffe stage 12. this roof trim 4 is flat-tapped with the lens 9 of the light 1 -- it comes to be formed like.

[0021] Since this invention consists of this embodiment, the light 1, Since the roof trim 4 which consists of molded headers only by not assembling accessories in the assembly plant of a car and moreover assembling the light 1 to the skeleton member 2 since it comes to be assembled beforehand is composed, the workability at the time of attaching will improve remarkably.

[0022] Since the 1st and 2nd main-en-griffe stages 11 and 12 can engage with the 1st and 2nd engagement means 6 and 7 of the skeleton member 2, Since a worker is supported only by driving the light 1 and can lay the placing means 13 in the 3rd engagement means 8, if the driven light 1 is shifted on right-hand side by drawing 3, the placing means 13 is laid on the 3rd engagement means 8, and even when vibration etc. are shocking, the light 1 will not separate from it certainly from the skeleton member 2.

[0023] Since the 3rd engagement means 8 consists of flat spring material which it comes to form in the shape of [to a section] a character, even if the board thickness of the roof trim 4 which consists of molded headers has change, it can follow enough and the possibility of generating of the trouble at the time of attachment decreases.

[0024] Since the wall 13a of said placing means 13 restricts the slide amount of the light 1, although they are what is called **** work where the alignment of the 1st engagement means 6 and the 1st main-en-griffe stage 11 becomes certain and that cannot be seen, it can be considered as easy work.

[0025] Since both said 2nd engagement means 7 and said 4th engagement means 15 come to be engaged when the 2nd main-en-griffe stage 12 is engaged, the roof trim 4 which consists of molded headers will be pinched by the skeleton member 2, and the positive support of the roof trim 4 which consists of molded headers of it is attained.

[Effect of the Invention]

[0026] According to the invention according to claim 1, since a molded header is composed only by not assembling accessories in the assembly plant of a car and moreover assembling a light to a skeleton member, since it comes to be assembled beforehand, the workability of a light at the time of attaching will improve remarkably.

[0027] Since the 1st and 2nd main-en-griffe stage can engage with the 1st and 2nd engagement means of a skeleton member, Since a worker is supported only by driving a light and can lay a placing means in the 3rd engagement means, if the driven light is shifted, a placing means is laid on the 3rd engagement means, and even when vibration etc. are shocking, a light will not separate certainly from a skeleton member.

[0028]According to the invention according to claim 2, since the 3rd engagement means consists of flat spring material which it comes to form in the shape of [to a section] a character, even if the board thickness of a molded header has change, it can follow enough and the possibility of generating of the trouble at the time of attachment decreases.

[0029]Since the wall of said placing means restricts a slide amount according to the invention according to claim 3, in spite of being what is called **** work where the alignment of the 1st engagement means and the 1st main-en-griffe stage becomes certain and that cannot be seen, it can be considered as easy work.

[0030]According to the invention according to claim 4, since both said 2nd engagement means and said 4th engagement means come to be engaged when the 2nd main-en-griffe stage is engaged, a molded header will be pinched by the skeleton member and the positive support of a molded header of it is attained.

[Brief Description of the Drawings]

[Drawing 1]The sectional view showing the tonneau light concerning one embodiment of this invention.

[Drawing 2]The exploded perspective view of drawing 1.

[Drawing 3]The sectional view showing the relation between the 3rd engagement means 8 of drawing 2, and the placing means 13.

[Drawing 4]The sectional view showing the relation between the 1st engagement means 6 of drawing 2, and the 1st main-en-griffe stage 11.

[Drawing 5]The sectional view showing the relation between the 2nd engagement means 7 of drawing 2, and the 2nd main-en-griffe stage 12.

[Drawing 6]The sectional view showing the tonneau light of a conventional example.

[Description of Notations]

- 1 Light
- 2 Skeleton member
- 3 Roof panel
- 4 The roof trim which is a molded header
- 5 The opening of a skeleton member
- 5a The short length edge of an opening
- 5b The edge of the long picture of the opening 5
- 6 The 1st engagement means
- 7 The 2nd engagement means
- 8 The 3rd engagement means

10 Housing

10a The valve stowage of housing

11 The 1st main-en-griffe stage

12 The 2nd main-en-griffe stage

13 Placing means

13a The wall of a placing means

13b The lateral wall of a placing means

14 The opening of a roof trim

15 The 4th engagement means





